REMARKS

By this amendment, applicants have amended claims 6 and 11 to change the second occurrence of "a mixture" to read --the mixture-- to improve the definiteness of these claims. Applicants have also added new claims 21-26 to define further aspects of the present invention. See, e.g., page 5, lines 19-22 of Applicants' specification.

Claims 6 and 13 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by U.S. Patent No. 6,444,365 to Ishii et al. Applicants traverse this rejection and request reconsideration thereof.

The present invention relates to a graphite powder that is used in an negative electrode for a lithium secondary battery, to a negative electrode for a lithium secondary battery including a layer of a mixture containing graphite powder, and to a lithium secondary battery including such a negative electrode. According to the present invention, the negative electrode and the graphite powder have a layer of a mixture containing graphite powder and an organic binder. Among other properties of the powder, the layer of the mixture has a diffraction intensity ratio (002)/(110) measured by X-ray diffractometry of at most 500.

The Ishii et al. '365 patent discloses a graphite particle obtained by assembling or binding together a plurality of flat-shaped particles so that the planes of orientation are not parallel to one another, or a graphite particle in which an aspect ratio is 5 or less or specific surface area is 8 m^2/g or less or the size of crystallite in the direction of c-axis of the crystal is 500 Å or more and the size of crystallite in the direction of plane is 1,000 Å or less as measured by X ray broad angle diffraction, or a graphite particle in which pore volume of the pores having a size falling in a range of 10^2 to 10^6 Å is 0.4 to 2.0 cc/g per weight of graphite particle or pore volume of the

pores having a size falling in a range of 1.times.10^2 to 2 x 10^4 Å is 0.08 to 0.4 cc/g per weight of graphite particle is suitable for production of negative electrode of lithium secondary battery, and a lithium secondary battery obtained therefrom.

The Office Action refers to, inter alia, column 5, lines 40-54 of Ishii et al. as allegedly disclosing that the ratio of (002)/(100) is at most 500. However, this portion of Ishii et al. '365 does not disclose a diffraction intensity ratio (002)/(100) measured by X-ray diffractometry. Rather, this portion of Ishii et al. merely discloses the size Lc of crystallite in the c-axis direction of crystal (002) and the size La of crystallite in the crystal plane direction (100). The diffraction intensity ratio (002)/(100) measured by X-ray diffractometry presently claimed is not the same as the size of crystallites in the c-axis direction of crystal (002) and size of crystallites in the crystal plane direction (100) disclosed in Ishii et al. '365.

As noted from page 5, line 26 to page 6, line 11 of Applicants' specification.

> Here, the diffraction intensity ratio (002)/(110) of a layer of a mixture of the graphite powders and the organic binder can be obtained, by use of a formula (1) below, from intensities of a diffraction peak of a (002) plane detected in the proximity of a diffraction angle 2Θ=26 to 27° and a diffraction peak of a (110) plane detected in the proximity of a diffraction angle 2Θ =70 to 80 ° when a surface of the layer of the mixture of the graphite powder and the organic binder is measured by X-ray diffractometry with a Cu Kα ray as an X-ray source. Diffraction peak intensity of (002) plane/diffraction peak intensity of (110) plane formula (1).

Thus, the diffraction intensity ratio property presently claimed is the ratio of diffraction peak intensity of (002) plane/diffraction intensity of (100) plane. On the other hand, the Ishii et al. '365 patent discloses only Lc (002) and La (100) sizes of crystallites generally calculated from half width values of peaks. It is submitted that the diffraction intensity ratio property presently claimed is not the same as a ratio Lc/La in Ishii et al. '365.

For the foregoing reasons, the Ishii et al. '365 patent does not disclose the presently claimed invention.

Claims 6-20 stand rejected under 35 U.S.C. 102(a) as being anticipated by JP-2004-055139 (Ishii et al.). This rejection is traversed since JP-2004-055139 to Ishii et al. is not prior art to the presently claimed invention.

The subject application is a national stage application of International Application PCT/JP04/000301 filed January 16, 2004. The filing date of the International Stage Application (January 16, 2004) is also the filing date of the present national stage application. 35 U.S.C. 363; PCT article 11(3); Manual of Patent Examining Procedure (MPEP) 1893.03(b). Where Applicants' international application filing date is prior to the effective date of an applied reference, the reference should not have been used. MPEP 715.

Since JP-2004-055139 is not prior art to the present invention, reconsideration and withdrawal of the rejection of claims 6-20 under 35 U.S.C. 102(a) as being anticipated by JP-2004-055139 (Ishii et al.) are requested.

Claims 6, 7, 9, 13 and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over JP-2001-283844 (Shoji) in view of U.S. Patent No. 6,344,296 to Ishii et al. Claims 6-20 stand rejected under 35 U.S.C. 103(a) as being patentable over Ishii et al. '296 in view of Shoji. Applicants traverse these rejections and request reconsideration thereof.

The disclosure of Ishii et al. '296 appears to be substantially the same as the disclosure of Ishii et al. '365 and, therefore, suffers from the same deficiencies noted above with respect to Ishii et al. '365.

The undersigned has been advised that JP-2001-283844 (Shoji) discloses that a diffraction intensity (002)/(100) is measured from graphite particle. On the

other hand, the diffraction intensity ratio of (002)/(100) is measured by X-ray diffractometry of the layer of the mixture. Thus, Shoji does not remedy any of the deficiencies noted above with respect to Ishii et al. '296 and vice-a-versa.

Furthermore, one effect of the present invention is "the rapid charge and discharge characteristics and the cycle characteristics of a lithium secondary battery are excellent." On the other hand, the effect of JP 2001-283844 is to improve the yield of a battery by restraining degradation of adhesion between graphite particles themselves or a graphite and a core body through restraint of sliding of basal faces, which is different from that of the preset invention or Ishii et al. '296. Thus, there would not have been any reason to combine Shoji with Ishii et al. '296.

For the foregoing reasons, the presently claimed invention is patentable over the proposed combination of Ishii et al. '296 and Shoji or Shoji and Ishii et al. '296.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all claims now in the application are respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Docket No. 1204.46402X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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